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ABSTRACT

The purpose of this study, completed with personnel who work in local disaster services, was to obtain data to test Etzioni's model of consensus and effectiveness. The data indicate that both early socialization and communication with elites are associated with consensus formation. Consensus formation and communication have direct and significant effects on individual effectiveness while socialization does not. (Author)

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A CAUSAL MODEL OF CONSENSUS FORMATION AND EFFECTIVENESS*

by

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A Causal Model of Consensus Formation and Effectiveness**

The effectiveness of an organizational system's goal attainment endeavors is in part a function of the effective behavior of its constituent elements, be those elements individuals, their roles, or subsystems. It is imperative, therefore, from an organization's perspective, that processes be implemented that maximize the probability of appropriate element behavior within given organizational situations. When the elements of concern are individuals and their role behavior, a number of analytically distinct, alternative and/or supplementary strategies have been delineated that are primarily oriented toward this problem.

One major work dealing with the strategies by which organizational systems maximize the probability of appropriate member behavior is the theoretical framework of Etzioni (1961). Etzioni notes two strategies that are integral to the purposes of this paper. The focus of interest here, however, is not in the strategies themselves, but rather, the manner in which these strategies are implicitly hypothesized to operate (i.e., the particular causal mechanism being posited).

The first of these organizational strategies is that of continuous communication between organizational control components and the organization's lower participants. Etzioni notes that the process of communication is, at the most general level, a "symbolic process by which the orientations of lower participants are reinforced or changed" (Etzioni, 1961:137). A second strategy employed by nearly all organizational systems, and intimately related to the communication process, is the socialization process or that process by which the beliefs, norms, and perspectives of the participant are brought into line with those of other organizations (Etzioni, 1961:142). Introducing some analytically useful temporal specificity with respect to communication, Etzioni (1961:142) notes that

communication is primarily concerned with the period before or shortly after new participants join the organization, when efforts to induce consensus between newcomers and the rest of the organization are comparatively intense.

Both the communication and socialization processes are purposively designed to "produce" consensus as an end product (Etzioni, 1961:127); consensus being a particularly key variable in the framework of Etzioni's compliance theory and one worthy of further attention. Six "spheres" of consensus have been delineated by Etzioni (1961:128-130). These spheres include: consensus on general values (i.e., values not peculiar to the organization under study); consensus on organizational goals; consensus on means, policy, or tactics; consensus on participation in the organization; consensus on performance obligations; and consensus on cognitive perspectives.

It is at least an implicit hypothesis in Etzioni's perspective (and a key hypothesis for this study) that the socialization and communication strategies operate through the six consensus spheres to produce effectiveness in the organizational system. This hypothesis may be derived from Etzioni's work in the following manner. First, within the theoretical framework, there are essentially three types of organizations: coercive types with order goals and coercive power forms; utilitarian types with economic goals and renumertative power forms; and normative types with cultural goals and normative power forms. Second, these three types of organizations, when cross-classified with Etzioni's three modes of lower participant involvement (i.e., alienative, calculative, and moral), yield nine possible organization/involvement combinations. Of these possible combinations, three are said to be predominant combinations. The predominance of these "congruent types" is essentially because any such congruent combination "is more effective, and organizations are social units under external and internal pressure to be effective" (Etzioni, 1961:12-13).

In a key statement, Etzioni goes further to express his dynamic hypothesis in that, when an incongruent combination exists in an organization, there will be a "strain toward an effective type" (Etzioni, 1961:187). Obviously, "effective" has become nearly synonymous with "congruent." It is assumed here, however, that this synonymity implies a correlational statement of relationship between the level of congruence and the level of effectiveness rather than a definitional statement. Because the primary mode of producing congruence of combinations, at the micro level, is by obtaining consensus between upper and lower participants to the organization by means of the socialization and communication processes, the appropriate linkage has been made, and the following general hypothesis may be stated:

> The communication and socialization processes operate through the consensus spheres to produce organizational effectiveness, but have no direct effect on that variable.

Utilizing the initial assumption of this paper (i.e., that organizational effectiveness and goal attainment are partly a function of the effective action of its constituent elements), the following subhypothesis will be posited:

> The communication and socialization processes operate through the consensus spheres to produce individual effectiveness, but have no direct effect on that variable.

Georgopoulos (1965) found significant correlations between a measure of perceived consensus about everyday operations of industrial units and effectiveness and related normative variables. To our knowledge, however, no one has published data that focus on Etzioni's specified consensus spheres and their correlates. Mulford et al. (1972a, b) have studied the impact of communication and socialization upon the accomplishment of formal organizational goals by organizational members, and Price (1968:45) has noted a substantial number of studies, mainly descriptive, investigating the impact of consensus spheres upon effectiveness. None of these studies, however, has imparted to consensus the particular mediating

role implied in Etzioni's conceptual perspective. Utilizing this perspective, the objective of this study is to test the implied causal model of effectiveness, and in doing so, to examine a major aspect of an influential theoretical orientation.

Methodology

Research setting and data collection methods

Throughout the United States, 7,000 local civil defense directors operate daily in an attempt to ensure that each of their respective communities has a maximized capacity to react positively to emergency situations involving many kinds of disaster. The key roles operating at this level are those of the local civil defense coordinators whose task it is to bring about the desired end states of the organization. They do so, however, with varying levels of effectiveness (Klonglan et al., 1964; Mulford et al., 1972a, b). The primary purpose of the overall research program, then, is to examine factors that may be causally operative with regard to effectiveness.

To this end, an extensive mail-out questionnaire was developed, which was designed to examine a variety of aspects of the local coordinator's role and the role environment. An intensive effort was made to operationalize many of the key Etzioni concepts including: socialization, communication, consensus spheres, scope, pervasiveness, salience, and may non-Etzioni concepts as well.

The sample

Utilizing information supplied by the Defense Civil Preparedness Agency, of which the local agency is a formal extension, a sample frame based upon (1) the population size of the local coordinator's political jurisdiction[1] and (2) the coordinator's regional status[2] was developed. Within each of the resultant 32 sampling units, a systematic sample was drawn utilizing a one-sixth

sampling rate. The final product of this procedure was a "drawn" sample size of 711 local coordinators. An initial mail-out of the questionnaire plus two follow-ups, produced an "obtained" sample size of 478 or approximately 67% of the "drawn" sample.[3]

Measurement of concepts

General descriptions of the indicators used for each concept employed in this paper are presented in Table 1. All indicators are composites based upon fixed, Likert-type items except for perceived socialization. The scale attributes of the indicators are presented in the right-hand portion of Table 2.

Perceived vertical socialization was measured by a single indicator designed to determine the local coordinator's perception about the extent of efforts by state agency staff to orient him immediately after he took his position. Previous research (Mulford et al., 1972a, b) has reported significant correlations between scores on this item and role performance. We obtained measures of both vertical and horizontal socialization, communication, and consensus spheres in the study, but are reporting only vertical here. Following Warren (1972), we will use vertical to refer to orientation toward and interactions with elites in the system at state and federal levels. We will use horizontal to refer to orientations and interaction with others in local government and in the private sector.

The linearity of the scales was evaluated in terms of the intervariable correlations. The value $\frac{1}{\sqrt{n}}$ where n is the number of items in a scale can be used as a quasi test of linearity. The coefficient represents the degree to which an item in a scale could correlate with the total score due to chance. According to Warren et al. (1969), the correlations between items r_{ij}s should be positive, and each item-total correlation r_{it} should be above the minimum value. For vertical communication, the average interitem ($\bar{r}_{ij}$) correlation was .35,

Table 1. Concept and Indicator Descriptions

CONCEPT	INDICATORS	ITEM RESPONSE FORMAT	INDICATOR USAGE FORMAT
X_4-Individual Effectiveness	Extent of:		$X_4 = \sum_{i=1}^{8} x_{4i}$
	x_{41}-establishment of emergency lines of communication	x_{41}-fixed, Likert Value Range 1-5	
	x_{42}-establishment of emergency operation center	x_{42}-same as x_{41}	
	x_{43}-accomplishment of public training activities	x_{43}-same as x_{41}	
	x_{44}-give information about civil defense to mass media	x_{44}-same as x_{41}	
	x_{45}-working with local voluntary organization	x_{45}-same as x_{41}	
	x_{46}-training and assignment of duties for government executives	x_{46}-same as x_{41}	
	x_{47}-accomplishment of shelter location and shelter maintenance activities	x_{47}-same as x_{41}	
	x_{48}-training and assignment of selected private citizens	x_{48}-same as x_{41}	
X_3-Consensus Sphere[4] (with state civil defense officials)	Degree of:		$X_3 = (x_{31})(x_{32}) + (x_{33})(x_{34}) + (x_{35})(x_{36})$
	x_{31}-understanding of state set goal priorities for local CD	x_{31}-fixed, Likert Value Range 1-5	
	x_{32}-agreement with state set task priorities for local CD	x_{32}-same as x_{31}	
	x_{33}-understanding of state defined methods for task accomplishment	x_{33}-same as x_{31}	
	x_{34}-agreement with state concerning methods for task accomplishment	x_{34}-same as x_{31}	
	x_{35}-understanding of state defined performance obligations for local director's role	x_{35}-same as x_{31}	
	x_{36}-agreement with state CD on performance obligations	x_{36}-same as x_{31}	

Table 1. (continued)

CONCEPT	INDICATORS	ITEM RESPONSE FORMAT	INDICATOR USAGE FORMAT
X_2-Communication (with state CD officials)	Frequency of: x_{21}-instrumentally oriented communications from state CD officials x_{22}-expressively oriented communications from state CD officials x_{23}-instrumentally oriented communications sent to state CD officials	x_{21}-fixed, Likert Value Range 1-6 x_{22}-same as x_{21} x_{23}-same as x_{21}	$X_2 = \sum_{i=1}^{3} x_{2i}$
X_1-Socialization	Amount and adequacy of job orientation received from State DCPA officials	x_1-fixed, Likert Value Range 1-3 based upon "little," "some," or "great deal" of socialization	X_1 = single indicator

Table 2. Zero-Order Intervariable Correlations and Scale Attributes[5]

VARIABLE	X_1	X_2	X_3	X_4	$\bar{X}$	S.D.	$\bar{r}_{ij}$	$\bar{r}_{it}$	Min r_{it}
X_1-Vertical Socialization	---				2.258	.724	NA	NA	NA
X_2-Vertical Communication	.288*	---			8.860	2.691	.357	.740	.577
X_3-Vertical Consensus	.240*	.411*	---		39.254	15.358	.659	.879	.577
X_4-Individual Effectiveness	.118*	.275*	.229*	---	26.545	6.775	.476	.730	.354

*Significant at .01 level

and the average item-total correlation ($\bar{r}_{it}$) was .740, which is about the minimum value of .577.

The six items shown in Table 1 were used to measure the degree to which the local coordinator was aware of and agreed with goal priorities set by state government, methods for task accomplishments, and state-defined performance obligations for local coordinators.

Vertical consensus meets the criterion for linearity. The average interitem correlation ($\bar{r}_{ij}$) is .476, while the average item-total correlation ($\bar{r}_{it}$) is .879.

Goals for local governments are spelled out in the Federal Civil Defense Guide published each year by the Department of Defense (1972). The guide specifies the goals toward which local communities must work to secure matching funds. We asked each coordinator to respond to eight items used to determine how much he had done in each goal area, with the coordinator responding for each the degree to which the task has been accomplished. The $\bar{r}_{ij}$ is .476, which indicates that the tasks are positively correlated while the $\bar{r}_{it}$ (.730) indicates that the effectiveness measure is linear.

Data analysis and results

Path analytic techniques were employed in an effort to examine the hypothesized causal mechanisms involved in the relatively simple model being investigated here. The necessary set of equations displaying the assumed nature of the relationships may be written as:

$$X_1 = p_{1a}X_a,$$

$$X_2 = p_{2b}X_b,$$

$$X_3 = p_{31}X_1 + p_{32}X_2 + p_{3c}X_c,$$

$$X_4 = p_{43}X_3 + p_{4d}X_d,$$

where

X_1 = Vertical Socialization,

X_2 = Vertical Communication,

X_3 = Vertical Consensus Spheres,

X_4 = Individual Effectiveness,

and the terms X_a through X_g are residuals. The usual assumptions for recursive systems are accepted. These equations and assumptions constitute the model under investigation.

Results

The results of the analysis of the model and the variables involved are shown diagramatically in Figure 1 and also in Tables 2 and 3. Table 2 presents the zero-order correlations among the variables, plus the necessary attributes of the indices involved in their measurement. The zero-order correlations in Table 2 are all significant at the .01 level, with communication being most highly correlated with effectiveness (.275). Clearly, the variables discussed by Etzioni are associated with effectiveness, although they do not account individually for a large proportion of the variance in role performance. Table 3 reports the resultant path values and supplementary statistics used to evaluate Etzioni's model. It is necessary to note that the term "Partial F", as is used in Table 3, is a usage adopted from Draper and Smith (1966:71-72). This is an indication of the relative contribution of the particular independent variable to the explanatory statement, and nothing more.

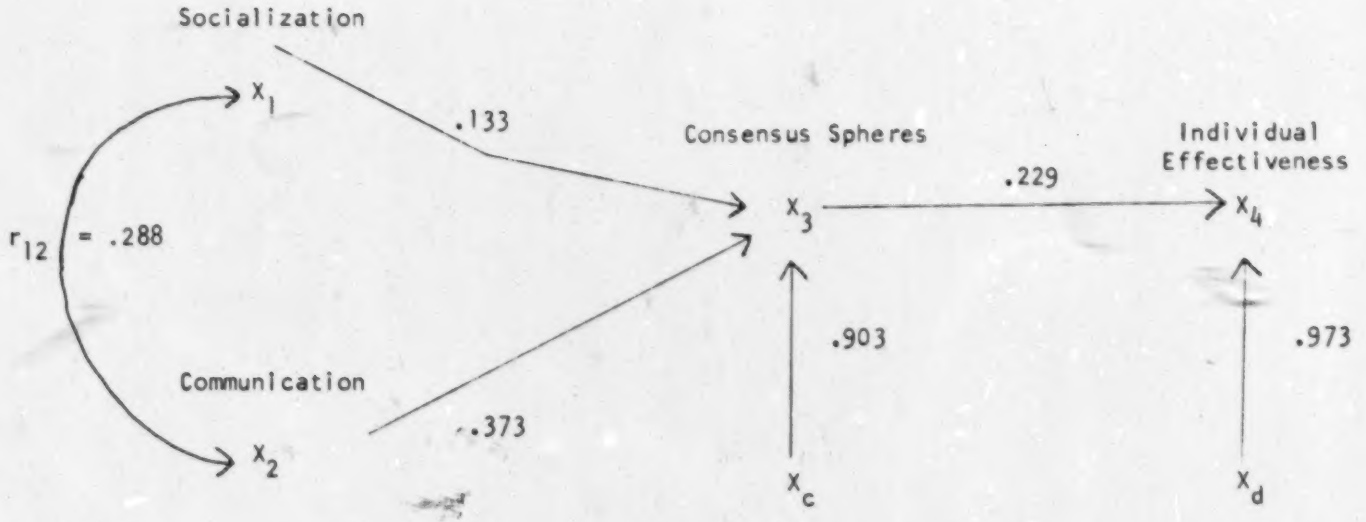

Figure 1. Etzioni's implied model of effectiveness.

Table 3. Partial Regression Analysis of Consensus Spheres Model - Etzioni's Implied Model and Expanded Model

Dependent and Independent Variables	Partial "F" Value	Standard Partial Regression Coefficient (P_{ij})	Percent Variance Explained ($R^2 \times 100$)
X_3 - Consensus spheres			18.5
X_1 - Socialization	9.417*	.133	
X_2 - Communication	74.389*	.373	
X_4 - Individual Effectiveness (Etzioni model)			5.3
X_3 - Consensus spheres	26.435*	.229	
X_4 - Individual Effectiveness (Expanded model)			9.2
X_1 - Socialization	0.263	.024	
X_2 - Communication	18.574*	.212	
X_3 - Consensus Spheres	7.934*	.136	

*F values significant at 5% level, i.e., $F > 3.84$. N = 478.

Discussion and evaluation of causal model

As is visible in Table 3, all path values produced significant F-values for the Etzioni model. Upon examination of the amount of the explanation actually being done, however (i.e., $R^2 x 100$), it is apparent that the model's explanatory capabilities leave something to be desired. Although nearly 20 percent of the variance in vertical consensus is accounted for by the direct effects of socialization and communication, only 5.3 percent of the effectiveness variance is accounted for by the Etzioni model. In as much as our pilot study with local coordinators (Mulford et al., 1972a, b) indicated that both socialization and communication are associated with effectiveness, we decided to expand the Etzioni model by adding hypothesized paths from these two variables to effectiveness as shown in Figure 2. The data for the expanded model in Table 3 indicate that communication and consensus have direct and significant effects on effectiveness, but that socialization does not. Communication and consensus account for about 10 percent of the variance in effectiveness. Communication has both direct and indirect effects on effectiveness. First, communication affects consensus, which affects effectiveness, and communication also directly affects effectiveness itself. Given these results, the function of communication should be further analyzed in organizations. The effects of communication may be latent as well as manifest. Research (Klonglan et al., 1972) indicates that many coordinators feel that their fellow community members do not value disaster planning. Communication from state personnel, given this low salience, may serve as a positive sanction for local coordinators.

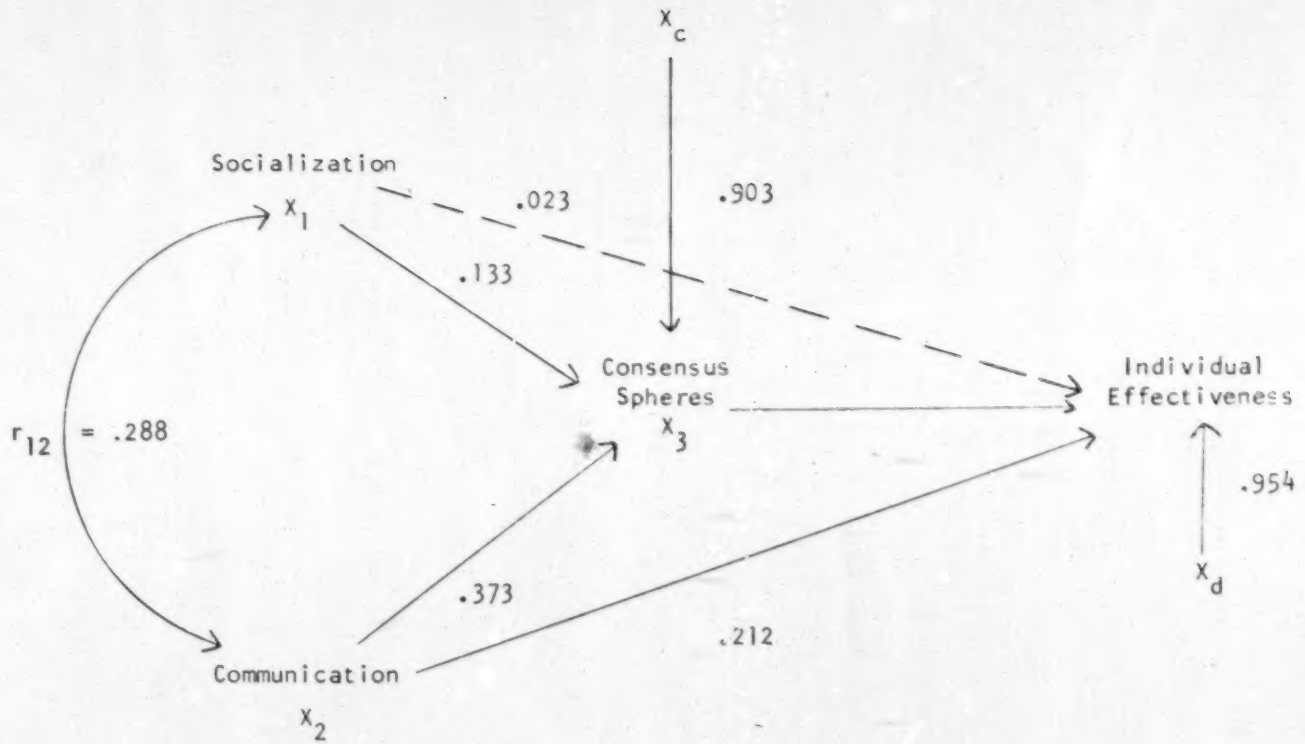

Figure 2. Revised model of effectiveness

— — — — — predicted but nonsignificant path.

Summary

First, the socialization and communication strategies are relatively ineffective predictors of the variation of the consensus spheres variable (explaining only 18.5 percent of the variance). The direct effect of communication upon the consensus spheres (p_{32} = .373), however, is more than twice as large as the direct effect of socialization (p_{31} = .133). Furthermore, the indirect effect of communication is relatively small ($r_{23} - p_{32}$ = .038). Socialization, on the other hand, has a much smaller direct effect and a proportionately larger indirect effect ($r_{13} - p_{31}$ = .107). In sum, while communication and socialization do produce a "statistically significant" amount of the variation in the consensus spheres and while communication has a relatively larger effect, the relative utility of the equation suggested by Etzioni is of some doubt. It is unfortunate, however, that no previous studies (to the authors' knowledge) have been accomplished using this particular Etzioni conception of consensus. Such comparable data in another research setting would make these findings more meaningful. About all one can conclude from these findings is that, for this particular class of research cases, socialization and communication were not extremely important for the consensus variables. In conjunction with this, it may be possible to note that a mediating variable in this case is the normative nature of the civil defense organizations. Where there is already a high general commitment to the purpose of the organization (i.e., populace survival) the socialization and communication strategies may play minor roles.

Second, and a key result for this paper, the effect of the consensus spheres upon individual effectiveness is almost negligible (p_{43} = .229, $R^2 \times 100$ = 5.3%) despite the statistical significance of the equation. The extent of the assumed association between consensus and individual effectiveness is not at all reflected in the produced coefficient. A conclusion that one must be forced to draw (and

one perhaps intended by Etzioni as well) is that consensus within the consensus spheres is only a necessary, but not a sufficient, condition for effective role performance. Our data suggest a slightly different and expanded model than the one implied by Etzioni. We suggest that communication, as well as consensus, may have direct effects on individual effectiveness.

An organizational member may both know and agree with organizational standards (i.e., have consensus with) and yet not be able to accomplish his tasks for a variety of reasons. Not the least of these reasons, of course, is the lack of essential and convertible resources. These resources could include his own time and sufficient budget to be used to accomplish goals.

Finally, a deficiency in this study must be noted before this lack of association between the consensus spheres and individual effectiveness can be interpreted. Etzioni states that "no study of consensus is complete unless it specifies the status groups among whom consensus is measured" (1961:130). Unfortunately, this has not been accomplished in this paper. The effect may be to obscure the real effects of consensus spheres upon effectiveness by focusing only upon vertical socialization, communication, and consensus. We are at this time investigating the utility of designing horizontal measures of these concepts. We think that the combination of vertical and horizontal effects may produce more meaningful causal models. In other words, we may find that one important special attribute of the local coordinator role is its vertical and horizontal dimensions (Warren, 1969:69-77, 1972), which derive from the fact that the role has two referent systems. The first of these is the federal agency system (the vertical component) and the second is the local community system (the horizontal component). This micro application of Warren's community model could be used to conceptually modify both the strategies discussed by Etzioni and the consensus spheres involved.

Such an elaborated model might be enlightening for the investigation of all such local coordinator roles (including health, welfare workers, etc.) A possible introduction of a conflict format might also be possible.

Footnotes

* Journal Paper No. J-7857 of the Iowa Agriculture and Home Economics Experiment Station, Ames, Iowa. Project No. 1754.

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1. Four population categories were used: (a) under 4,999; (b) 5,000-14,999; (c) 15,000-49,999; and (d) 50,000 and over.

2. The national civil defense system is divided into eight regions.

3. An analysis of the population size of the jurisdictions served by the coordinators in the obtained sample with the population size of the jurisdictions of coordinators who did not complete the questionnaire indicates no sample bias. A similar analysis based on the pay status (paid vs. volunteer) of coordinators indicates the obtained sample is not biased.

4. An attempt was made to measure consensus in three of the six consensus spheres. Consensus on general values and consensus on participation are assumed to be fairly high due to the normative nature of the organization. No attempt was made to measure consensus on cognitive perspectives because of the sheer difficulty of ascertaining what "facts" are relevant and up to date within the civil defense system.

5. Three major scale attributes are given: $\bar{r}_{ij}$, the average interitem correlation; $\bar{r}_{it}$, the average item-total (item included in total) correlation; and the min-r_{it} (Warren et al., 1969:14). This "minimum acceptable" item-total correlation coefficient serves as a quasi-significance test of linearity. This coefficient defines the amount of independent variance of the total score contributed by each item if there were no experimental relationship; i.e., the amount of variance contributed only by chance.

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